

CLAIMS

What is claimed:

1. A method of detecting read errors in a set of NVM cell, said method comprising:
 - during or prior to programming of the set of cells, counting the number of cells to be programmed to, up to and/or above one or more logical states of a set of logical states associated with the NVM cells; and
 - comparing the number of cells read at a given state against a value corresponding to a number of cells which should be at the given state based on the counting performed during or prior to programming.
2. The method according to claim 1, wherein counting comprises counting the number of cells to be programmed at or above each logical state associated with the set of cells.
3. The method according to claim 1, wherein comparing comprises comparing the number of cells read at a given state to the number of cells of the set which were programmed at or above the given state and the number of cells of the set which were programmed at or above a logical state adjacent to and higher than the given state.
4. The method according to claim 3, further comprising determining the number of cells which should be at the given state by subtracting the number of cells of the set which were programmed at or above the

given state by the number of cells of the set which were programmed at or above a higher adjacent state to the given state.

5. A method of adjusting one or more read verify reference levels of a set of cells comprising:

during or prior to programming of the set of cells, counting the number of cells to be programmed to, up to and/or above one or more logical states of a set of logical states associated with the NVM cells;

comparing the number of cells read at a given state against a value corresponding to a number of cells which should be at the given state based on the counting performed during or prior to programming; and

either raising or lowering a read verify level associated with the given state, or associated with an adjacent state, based on the comparison.

6. The method according to claim 5, wherein counting comprises counting the number of cells to be programmed at or above each logical state associated with the set of cells, comparing comprises comparing the number of cells read at a given state to the number of cells of the set which were programmed at or above the given state and the number of cells of the set which were programmed at or above a logical state adjacent to and higher than the given state.

7. The method according to claim 6, wherein if the number of cells read at a given logical state is lower than the number of cells expected at the given state, either the read verify level associated with that given state may be lowered or the read verify level of the adjacent higher state may be raised.
8. The method according to claim 6, wherein if the number of cells read at a given logical state is greater than the number of cells expected at the given state, either the read verify level associated with that given state may be raised or the read verify level of the adjacent higher state may be lowered.